

Applicant: Robert Podoloff et al.
Application No.: 10/822,763
Response to Office action dated Dec. 28, 2005
Response filed March 28, 2006

In the Specification

Please amend paragraph [0022] as follows:

[0022] Turning now to FIG. 3, a preferred embodiment of the device 30, is shown in accordance with the present inventive concepts. FIG. 3 shows a typical configuration of the construction of a thick film thermistor. The device 30 comprises a pair of shaped electrical conductors 410, 420 on a first support substrate 220. The first support substrate 220 may be a flexible insulating film such as a polyester or polyimide film. The pair of shaped electrical conductors 410, 420 may typically be 0.00025 inch thick silver ink traces. A temperature sensitive ink layer 310 is deposited over the pair of electrical conductors 410, 420. This temperature sensitive ink layer 310 may typically be a 0.0005 inch thick semiconductive ink layer. A second support substrate 210 is bonded to the first support substrate 220. The second support substrate 210 may also be a flexible insulating film such as a polyester or polyimide film. This thermistor 30 is designed to eliminate the ~~force~~force-sensitive nature of the inks by eliminating the semiconductive to semiconductive mechanical interface which is the major contributor to the force-conductance interaction of the devices. By printing the semiconductive ink layer 310 on top of the shaped conductors 410, 420, the region of the force sensing ~~contract~~ contact interface is removed. The interdigitated conductor pattern shown is intended to increase the contact length between the conductors and the semiconductive ink while minimizing overall sensor size. The desire for a relatively long contact length is influenced by the relatively high overall impedance of the ink itself. Sensors may be manufactured using several

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ink blends on several different sensor geometries in which the number and width of the interdigitated conductor fingers were varied. These sensors perform independently of the force applied to their surfaces and exhibit the expected response. Although the sensitivities of the sensors to changes in temperature varied greatly with the different ink blends and geometries, all of the sensors exhibited performance which could be characterized by a straight line in a semi-log plot of resistance versus temperature.

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Please amend paragraph [0023] as follows:

[0023] Turning now to FIG. 4, an alternate embodiment of the device 40 is shown in accordance with the present inventive concepts. FIG. 4 shows a configuration of a sensor integrated with a thick film thermistor, both manufactured using the same materials and process. FIG. 4 depicts a force sensing region 700 that comprises sandwiched layers of a first support substrate on which a first shaped force sensor conductor is deposited. A connecting point 450 is provided for the first shaped force sensor conductor. A second layer of force and temperature sensitive material is deposited over the first shaped sensor conductor. A mirror image of this configuration that comprises a second support substrate, a second shaped force sensor conductor, and a third layer of force and temperature sensitive material is bonded to the first support substrate such that the second and the third force and temperature sensitive layers are in contact with and coextensive with each other. Also included is the temperature sensing region 600 that comprises a pair of shaped thermistor conductors deposited on the first support substrate and a first force and temperature sensitive layer deposited over the pair of shaped thermistor conductors. The second support substrate covers the first force and temperature sensitive layer when it is bonded to the first support substrate[.]. A common connecting point 460 is provided for the second shaped force sensor conductor and one of the elements of the pair of shaped thermistor conductors. A connecting point 470 is provided for the other element of the pair of shaped thermistor conductors. The first and the second support substrates may be flexible ~~insulating~~ insulating substrates such as polyester or polyimide film. The force and temperature sensitive layers may be 0.0005 inch thick semiconductive ink layers. The conductors may be 0.00025 inch thick silver ink traces.